MATTERS ARISING

An outbreak of penicillin-sensitive strain of *Neisseria gonorrhoeae* in Sydney men

The recent article by Rowbottom *et al*[1] concerning an outbreak of a penicillin sensitive strain of *Neisseria gonorrhoeae* prompts us to report the recent emergence of a new strain of infection in the gay men attending the genitourinary medicine clinic in Edinburgh, Scotland.

In 1993 we were aware of an increase in the number of infections with serovar 1A-6 in gay men. Over the 4 year period 1990 to 1993 infections due to 1A-6 accounted for 4·5% (23/508) of all cases of gonorrhoea in Edinburgh. In gay men between 1990–92 1A-6 infections only accounted for 3·4% (5/147) of infections but in 1993 this increased with 21% (7/33) of homosexually or bisexually acquired infections ($p = 0·02$, Fishers exact test). The prevalence of 1A-6 in the heterosexual population did not alter significantly (1990–92:10/260[3·8%] cf.1993:1/41[2·4%]).

Classification of infections as homosexually acquired was based on the patients' self reported behaviour but additional confirmation was provided by the high male:female sex ratio (19:4) with no 1A-6 infections diagnosed in women in 1993. The sites of infection were also consistent with increased homosexual acquisition with rectal or pharyngeal infections accounting for 5 of the 8 1A-6 infections in 1993 compared with 5 out of 15 1A-6 infections in 1990-92.

An association between the serovar isolated and sexual orientation is well recognised.[2,3] 1A-1/2 infections are commonly seen in heterosexual patients[4] whilst 1B strains are commoner in gay men.[5,6] Thus the recent increase in incidence of infections with 1A-6 in gay men is unusual.

There are a number of possible explanations for the observed change in serovar pattern. Increased resistance to penicillin may provide a selective advantage in the gay population and serovars isolated from gay men tend to have a reduced sensitivity to penicillin.[5] Although 1A strains are usually more sensitive to penicillin than 1B isolates,[7,8] a change in penicillin sensitivity in 1A-6 strains was evident between 1990–92 and 1993 with a decrease in the proportion of isolates with an MIC of $< 0·5$ mg/l from 93% (14/15) to 12% (1/8) ($p < 0·01$). Although such resistance may be an advantage where antibiotic pressure is high there is generally poor correlation between the level of resistance to antibiotics and prevalence of a serovar[9] possibly as a result of an associated impaired uptake of nutrients.

Alternatively the sharp increase in 1A-6 infections in gay men may be a result of its chance introduction into a "high frequency transmitter" group of promiscuous individuals which might result in a brief and self limiting micro epidemic. One possible source for this strain is the Far East where 1A-6 infections are common.[10] The isolation of all seven homosexual isolates in the first six months of 1993 would support this hypothesis. Interestingly although all seven homosexually acquired infections were acquired locally, the one heterosexual infection in 1993 was acquired in the Far East raising the possibility that this individual was actually bisexual.

Thus, although uncommon, 1A serogroup infections can be associated with both an outbreak of homosexually acquired infection and with reduced penicillin sensitivity.

JONATHAN D C ROSS
HUGH YOUNG
Department of GU Medicine and Scottish Gonococcal Reference Laboratory, Edinburgh Royal Infirmary, Lauriston Place, Edinburgh EH3 9YW, UK

1 Rowbottom JH, Tapsall JW, Plummer DC, *et al.* An outbreak of a penicillin-sensitive strain of gonorrhoea in Sydney men. *Genitourin Med* 1994;**70**:196–9.
2 Young H, Moyes A, Ross JDC, McMillan A. Patterns of homosexually acquired gonococcal serovars in Edinburgh 1986–90. *Genitourin Med* 1991;**67**:312–6.
3 Young H, Moyes A, Ross JDC, McMillan A. A serovar analysis of heterosexual gonorrhoea in Edinburgh 1986–90. *Genitourin Med* 1992;**68**:16–19.
4 Woodford N, Bindayna KM, Easmon CS, Ison CA. Associations between serotype and susceptibility to antibiotics of *Neisseria gonorrhoeae. Genitourin Med* 1989;**65**:86–91.
5 Bygdeman S. Gonorrhoea in men with homosexual contacts. Serogroups of isolated gonococcal strains related to antibiotic susceptibility, site of infection, and symptoms. *Br J Venereal Dis* 1981;**57**:320–4.
6 Morse SA, Lysko PG, McFarland L, *et al.* Gonococcal strains from homosexual men have outer membranes with reduced permeability to hydrophobic molecules. *Infect Immun* 1982;**37**:432–8.
7 Bygdeman S. Antibiotic susceptibility of *Neisseria gonorrhoeae* in relation to serogroups. *Acta Pathologica et Microbiologica Scandinavica*—Section B, *Microbiology* 1981; **89**:227–37.
8 Young H, Moyes A, Robertson DHH, *et al.* Gonococcal infection within Scotland: antigenic heterogeneity and antibiotic susceptibility of infecting strains. *Eur J Epidemiol* 1990;**6**:1–8.
9 Gill MJ. Serotyping *Neisseria gonorrhoeae*: a report of the Fourth International Workshop. *Genitourin Med* 1991;**67**:53–57.
10 Bygdeman S. Polyclonal and monoclonal antibodies applied to the epidemiology of gonococcal infections. In: Young H, McMillan A, eds. *Immunological Diagnosis of Sexually Transmitted Diseases.* New York: Marcel Dekker, 1987:117–65.

The value of primary colposcopy in genitourinary medicine

Moss and colleagues[1] have reviewed their use of "primary colposcopy"—that is colposcopy used as a screening test—in a population of genitourinary medicine (GUM) clinic attenders. They appear to suggest that they have demonstrated a need for such screening and even suggest that such screening would be cost effective. I would like to raise some doubts.

They report only the results of "primary colposcopy" in 1,338 women who had "an abnormal transformation zone". We are not told how many colposcopies in total were performed under this regime, the majority of which might be assumed to have been normal. It would appear that a very large number of colposcopies had to be performed to detect 15 cases of cervical intraepithelial neoplasia (CIN) grade 2/3; there is no evidence that the current national screening policy would not have detected these lesions on subsequent cytology and before the development of invasive disease. It has already been shown that colposcopy as a screening tool will detect about three times as many lesions as cytology, but that these additional lesions are smaller, and of unknown natural history.[2] It has also been shown that using colposcopy as screening in a GUM population will throw up a large proportion of diagnoses of CIN.[3] The majority of these cases are of low grade lesions (again of uncertain natural history). When the data from reference 2 and reference 3 are compared it can be seen that the incidence of CIN lesions and of cytology false-negatives is almost identical among the younger age group attending GUM clinics[3] (and personal communication, P.G. Walker). These observations suggest that GUM clinic attenders are not at particularly increased risk for CIN lesions compared with similar aged women in the general population, and further that the cytology false-negative rate is also similar. If Moss and colleagues view is to be accepted, then the logical implication is that "primary" or screening colposcopy is warranted in all young women. Clearly such screening is not supported by these data. It should be borne in mind that the 12·3% incidence of CIN is not 12·3% of the total female GUM clinic population but only among the 1,338 with "an abnormal transformation zone".

Attempts to define high risk groups for screening should not be blindly accepted. Hakama and colleagues[4] showed that screening high risk groups for cervical disease was ineffective, as it concentrated too much effort on small groups who may be at increased risk, but who may only represent a fraction of the cases. Austoker and Duncan[5] and the National Co-ordinating Network[6] for cervical screening have indicated that increased surveillance, of high risk groups, in the form of more frequent screening, is inappropriate. I fail to see how this advice can permit the increased screening in the form of screening colposcopy.

Among Moss and colleagues' references was a rather sceptical review of the value of cervical screening: might I also sceptically inquire as to whether there are any data on how many of the cases of *cervical cancer* diagnosed in the Doncaster area had ever been GUM clinic attenders? I suspect very few.

The data presented by Moss and colleagues are interesting, in that they demonstrate that false negatives of cytology exist in GUM patients as in other women; that the correlation between cytology and colposcopically directed biopsies is less than perfect in GUM patients as it is in other women; and provide no evidence of a useful role for "primary colposcopy" outside of a research setting. Until such evidence is produced genitourinary physicians should be on their guard not to be pushed headlong into a pointless colposcopic search for CIN lesions, and should continue to regard cytological screening as being as relevant to their patients as to women in primary care family planning and gynaecology clinics.

MALCOLM GRIFFITHS
Department of Obstetrics and Gynaecology Luton and Dunstable Hospital NHS Trust Lewsey Rd, Luton LU4 0DZ, UK

1 Moss TR, Hawkswell J, Fogarty B, Dadswell C. The value of primary colposcopy in genitourinary medicine—a six year review. *Genitourin Med.* 1994;**70**:191–5.
2 Giles JA, Hudson E, Crow J, *et al.* Colposcopic assessment of the accuracy of cervical cytology screening. *BMJ* 1988;**296**:1099–102.

3 Griffiths M, Sanderson D, Penna LK. Cervical epithelial abnormalities among women with warts—no more common than among controls. *Int J Gynecol Cancer* 1992;2:49–51.
4 Hakama M, Pukkala E, Saastamoinen P. Selective screening: theory & practice based on high-risk groups for cervical cancer. *J Epidemiol Comm Health* 1979;33:257–61.
5 Austoker J, Duncan ID. Cervical screening in general practice. *BMJ* 1990;301:236–7.
6 Duncan ID (ed) 1992 (for National Co-ordinating Network). *Guidelines for clinical practice and programme management.* NHS Cervical Screening Programme. London.
7 McCormick JS. Cervical smears: a questionable practice? *Lancet* 1989;ii:207–209.

Moss replies:

I have read with interest correspondence from Dr. Malcolm Griffiths relating to our review of primary colposcopy.[1]

This paper described an extension of retrospective research which was designed to begin to answer questions arising from the association and inter-relationship between cervical dyskaryosis and/or CIN and other concomitant sexually transmitted diseases. The original work was presented to the Working Party of the National Co-ordinating Network and was vigorously debated.

There are at least two valid reasons for considering future carefully prepared prospective primary colposcopy studies in collaboration with cytopathology. The first of these was acknowledged by the NCN Working Party:- "In young women HPV may be one of a multiplicity of sexually transmitted diseases present simultaneously and referral to a genito urinary medicine clinic should be considered."[2] This seems in complete agreement with the conclusion made by Griffiths and colleagues in a study of 154 women with dyskaryotic cervical smears referred from colposcopy from "two distinct population groups":- "*We conclude that an abnormal cervical smear is frequently a marker of concomitant lower genital tract infection*".[3]

A second reason is that it is important to be aware of discrepancies between cytology and histology of more than 2 degrees of variance.[4]

In reply to Dr. Griffiths it must be asked does the paper by Giles *et al* support the case he has argued? Not everyone would think so. Dr Griffiths' letter appears to combine two separate references.[5,6] Surely it is not valid to arbitrarily combine papers with a different methodology and with different outcomes and then construct a "combined conclusion".

Giles clearly stated that the importance of small lesion size was unknown, not that small lesions were unimportant. By continuing primary colposcopy small numbers of cases of high grade CIN of variable lesion size are identified where the degree of variance with cytology is >2 degrees.

Further, current primary colposcopy has recently identified one case showing CIN III, where high grade colposcopic changes are present throughout all four quadrants and the abnormality extends onto the vaginal vault. Would anyone wish to leave such findings untreated?[7] This process achieves earlier diagnosis and affords the opportunity to continue combined audit with cytopathology.

None of the authors of the review paper on primary colposcopy have any sceptical feelings regarding the value of cervical screening. On the contrary, applying this technology to new female attenders in GU Medicine has allowed us to understand more about the variance (inter and intra observer variation) in cervical cytology and to develop a greater understanding of cytopathology, as well as to communicate and explain in a better way to our patients and to their partners.

Griffiths speculates that very few cases of *cervical cancer* diagnosed in the Doncaster area have ever been GUM attenders. The current Doncaster District confidential audit of cervical cancer deaths will identify any fatal cervical cancer cases who had attended genitourinary medicine clinics (1990 onwards). This, together with 14 years of follow-up audit in a town with a relatively stable population, may well confirm his views. Should he be proven to be correct then GU cytology here, combined with primary colposcopy might be judged to have served our population well.

This approach, and a historical review paper taken properly in context might also constitute an appeal for a compassionate and sensitive approach to colposcopy, with well informed patients in a comfortable, secure clinical environment. Few colposcopists would argue against this last concept.

For a current consensus UK viewpoint on the role of genito urinary colposcopy reference is made to a forthcoming Definitive Document from the National Co-ordinating Network.[8]

T R MOSS

1 Moss TR, Hawkswell J, Fogarty B, Dadswell C. The value of primary colposcopy in genitourinary medicine—a six year review. *Genitourin Med* 1994;70:191–5.
2 Duncan I, Editor, NHS Cervical Screening Programme, National Co-ordinating Network: Guidelines for Clinical Practice and Programme Management, National Co-ordinating Network, Oxford Regional Health Authority, March 1992.
3 Byrne MA, Turner MJ, Griffiths M, Taylor-Robinson D, Soutter WP. Evidence that patients presenting with dyskaryotic cervical smears should be screened for genital tract infections other than human papillomavirus infection. *European Journal of Obstetrics, Gynecol Reproductive Biology* 41(2):129–33, 1991 Sept 13.
4 Contreras-Melendez L, Herbert A, Millward-Sadler GH, *et al.* Assessment of the accuracy of cytology in women referred for colposcopy and biopsy: the results of a one year audit. *Cytopathology* 1992;3:267–74.
5 Giles JA, Hudson E, Crow J, *et al.* Colposcopic assessment of the accuracy of cervical cytology screening. *British Medical Journal* 1988; 296:1099–102
6 Griffiths M, Sanderson D, Penna LK. Cervical epithelial abnormalities among women with warts-no more common than among controls. *International Journal Gynnecol Cancer* 1992;2:49–51.
7 McIndoe WA, McLean MR, Jones RW, Mullins PR. The invasive potential of carcinoma in situ of the cervix. *Obstetrics & Gynecology* Vol 64 No 4 451–458.
8 The role of genitourinary medicine cytology and colposcopy in cervical screening: does the GU female population merit a different cytology/colposcopy strategy? National Co-ordinating Network Definitive Document. September 1994.

Genital herpes simplex virus type 1 in women

Wilson *et al*[1] reported an apparent increase in the prevalence of herpes simplex virus type 1 genital infection in women. We report a retrospective case note audit of patients presenting with clinical primary genital herpes, noting relative incidences of herpes simplex virus type 1 amongst male and female patients, and sexual practices.

Incidence of herpes genital infection

	Female	*Male*
Herpes simplex virus type 1	25 (67·6%)	9 (75%)
Herpes simplex virus type 2	12 (32·4%)	3 (25%)
Total	37	12

Ninety patients who had presented to the genitourinary medicine clinics at Durham and Bishop Auckland between April 1992 and April 1994 were identified using KC 60 data: code C10a (herpes simplex first attack). All were heterosexual and the group comprised 28 men and 62 women. All had genital swabs taken for viral culture, and these were all sent to the PHLS at Newcastle, where the isolates were typed using monoclonal antibodies conjugated to FITC. A result was documented in 89 case notes, of which 40 (44·9%) were negative. The majority of positive cultures were HSV 1 (see table).

Participation in orogenital sex was documented in 42 cases (although there was no differentiation between active or passive involvement). In the group with HSV 1, 23/32 (71·9%) had participated in oral sex, compared with the HSV 2 group in which 6/12 (50%) gave this history ($p = 0·296$). Details concerning orogenital contact were only present in 80 sets of notes. Presence or absence of cold sores in patient or partner, or a previous history of them, was poorly documented, being recorded in less than 50% of casenotes.

Evidence from Edinburgh and London suggests that herpes simplex virus type 1 does appear to have been increasing in incidence, although previously with a continuing predominance of HSV 2 in genital lesions.[2,3] This may be related to orogenital contact—recent figures from the nationwide survey of sexual attitudes and lifestyles in the U.K.[4] show that 75·2% of men and 69·2% of women have participated in oral sex at some time, with 55·6% of men and 49·5% of women reporting this practice in the last year.

This study only looked at cases of primary genital herpes, whereas Wilson *et al*[1] appear to have studied viral swabs taken from patients with primary or recurrent disease. If the incidence of HSV 1 is currently rising, it might be expected that the proportion of HSV 1 amongst cases of primary genital herpes may be increasing more noticeably.

Another clinic in the same region as our own has also reported a higher incidence of HSV 1 in women (in press).

SARAH EDWARDS
CONRAD WHITE
Department of Genitourinary Medicine, Dryburn Hospital, Durham, DH1 5TW, UK

1 Wilson P, Cropper L, Sharp I. Apparent increase in the prevalence of herpes simplex virus type I genital infections among women. *Genitourin Med* 1994;70:228.
2 Smith IW, Peutherer JF, Robertson DHH. Virological studies in genital herpes. *Lancet* 1976;2:1089.
3 Barton IG, Kinghorn GR, Walker MJ, Al-Omer LS, Potter CW, Turner EB. Association of HSV I with cervical infection. *Lancet* 1981;2:1108.
4 Johnson AM, Wadsworth J, Wellings K, Field J. *Sexual Attitudes and Lifestyles.* Oxford, Blackwell 1994:159–163.